FY19 ECR MAIL PROCESSING UNIT COSTS

I. PREFACE

A. Purpose and Content

USPS-FY19-18 develops mail processing unit costs by shape for USPS Marketing Mail Enhanced Carrier Route (ECR) rate categories. It contains electronic documentation of the spreadsheets and programs used to develop these costs.

B. Predecessor Documents

The most recent predecessor document was USPS-FY18-18 in Docket No. ACR2018.

C. Corresponding Non-Public Document

There is no corresponding non-public document.

D. Methodology

The methodology for the calculation of USPS Marketing Mail ECR unit costs is the same as used in Docket No. ACR2018, USPS-FY18-18 (FY2018 ECR Mail Processing Costs), spreadsheet FY18 ECR Unit Costs.xls. The basic methodology originated in Docket No. R2006-1, USPS-LR-L-107.

E. Input/Output

USPS-FY19-18 relies upon mail processing cost inputs from USPS-FY19-26; volume inputs from USPS-FY19-14 and USPS-FY19-26; and drop shipment cost avoidances from USPS-FY19-13. It also relies upon the 2019 IOCS data set in USPS-FY19-NP21 and cost distribution and cost pool assignment methodology in USPS-FY19-7.

USPS-FY19-18 outputs are used in the following public folder:

USPS-FY19-3 FY 2019 Discounts and Passthroughs of Workshare Items

II. ORGANIZATION

The main results are presented in the Microsoft Office Excel workbook 'FY19 ECR Unit Costs.xls' in the spreadsheet 'Results.' This spreadsheet is also reported in Table 1 below. Data sources are referenced in each spreadsheet in

workbook 'FY19 ECR Unit Costs.xls.' The programs and workbooks used to estimate these costs are described in the Program Documentation section below.

Table 1
FY19 USPS Marketing Mail ECR Unit Costs
(cents per piece)

ECR Rate Category	Unit Cost (cents)
Basic Letters	29.853
Saturation Letters	2.645
High Density Letters	2.080
Basic Flats	8.309
Basic Parcels	818.714
Total Basic Nonletters	8.321
Saturation Flats	1.475
Saturation Parcels	96.171
Total Saturation Nonletters	1.480
High Density Flats	4.486
High Density Parcels	n/a
Total High Density Nonletters	4.486

III. PROGRAM DOCUMENTATION

A. Computer Hardware and Software

The FORTRAN programs are run on a HP ProLiant DL560 Gen 8 with four Intel Xeon E5-4650 (each with 8 cores @ 2.70GHz) microprocessors and 256 GB of RAM. The operating system on this computer is Red Hat Enterprise Linux Server release 7.7 (Maipo) with the kernel 3.10.0-1062.1.2.el7.x86_64. FORTRAN programs are compiled using GFORTRAN from GNU Compiler Collection (GCC) version 4.8.5, which can be downloaded from http://gcc.gnu.org/fortran . The manual processing spreadsheet work is performed on PCs running the Windows 10 (64-bit) operating system and using Microsoft Office Excel 1902 (64-bit) from Microsoft Office 365 (64-bit).

USPS-FY19-18 includes electronic versions of all relevant programs, maps, and data files. The compiler used to run the PC-based FORTRAN programs can be

downloaded freely from http://gcc.gnu.org/wiki/GFortranBinaries. Download the Windows 64-bit version of GFORTRAN. To compile use the command line: x86_64-pc-mingw32-gfortran.exe –O2 –ffixed-line-length-132 –finit-local-zero –fbounds-check –o {executable name} {program name.f}. The PC-based FORTRAN programs should be run in the same order as the programs are described below.

B. Preparation of the IOCS Data

The following program extracts clerk and mail handler tallies from the 2019 IOCS data set and prepares the tallies for the volume-variable cost distribution for both mail processing and administration/window service costs for clerks and mail handlers as described in USPS-FY19-7.

Program: **cadoc19_prc.f** – Separates the clerk and mail handler tallies from the entire 2019 IOCS data set, separates the tallies between mail processing and administrative/window service, and assigns a cost pool to each tally using the method described in USPS-FY19-7.

Input: **FY19 IOCS Data** – Text flat file version of the submitted SAS IOCS nonpublic data set (USPS-FY19-NP21)
iocs2019_np.h – Declaration of IOCS tally fields
mods_fins19.prn – List of MODS 1&2 finance numbers used to identify MODS 1&2 offices (USPS-FY19-7)
mods_fcn4_fy19.prn – Map of function 4 MODS operation codes which are assigned to Non-MODS cost pools
costpools19.prn – Map of mail processing cost pools

Output: **clk_mh_mp19.dat** – IOCS mail processing tallies
clk_mh_aw19.dat – IOCS administrative and window service tallies

B. Cost Estimates – Clerks and Mail Handlers, Mail Processing

The following FORTRAN programs replicate the function of the mail processing cost distribution SAS programs documented in USPS-FY19-7. The results of these programs are exported into Microsoft Office Excel where final results are summarized and reported.

Program: **mpproc19_ecr.f** – Estimates the mail processing volume-variable costs by activity code and cost pool.

Input: **clk_mh_mp19.dat** – IOCS mail processing tallies
iocs2019_np.h – Declaration of IOCS tally fields

activity19_ecr.dat – List of the direct and class specific mixed activity codes
mixclass.intl – List of class specific mixed mail activity codes
mxmail.ecr.dat – Maps the direct activity codes to their respective class specific mixed mail activity codes
costpools19_ld15.prn – List of mail processing cost pools and cost pool dollars (USPS-FY19-7)

Output: **mp19prc_ecr.data** – Estimated mail processing volume-variable costs by cost pool and activity code

Program: **sumclass_ecr.f** – Rolls up the output from mpproc19_ecr.f from activity code to USPS Marketing Mail ECR rate category by cost pool and shape

Input: **mp19prc_ecr.data** – Estimated mail processing costs by cost pool and activity code
costpools19_ld15.prn – List of mail processing cost pools
activity19_ecr.dat – List of the direct and class specific mixed activity codes
classes_cra19.prn – List of CRA subclasses

Output: **mp19cra_ecr.csv** – Estimated volume-variable costs for USPS Marketing Mail ECR mail by cost pool, shape, and ECR rate category

Workbook: **FY19 ECR Mail Proc Costs.xls** – Summarizes estimated mail processing volume-variable costs for USPS Marketing Mail ECR mail by cost pool, rate category, and shape.

Input: **mp19cra_ecr.csv** – Estimated volume-variable costs for USPS Marketing Mail ECR mail by cost pool, shape, and ECR rate category
FY19 Mail Processing Volume-Variable Costs – ECR mail processing costs by shape (USPS-FY19-26)

Workbook: **FY19 ECR Unit Costs.xls** – Development of FY19 ECR mail processing unit costs.

Input: **FY19 ECR Mail Proc Costs.xls**
FY19 RPW Volumes – USPS-FY19-26
FY19 RPW Weights – USPS-FY19-14
FY19 Piggyback Factors, Cost Ratios, Volumes, and Reconciliation Factors – USPS-FY19-26
Nontransportation unit cost avoidance per pound per entry point - USPS-FY19-13